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In view of these facts, little significance is to be attached to the failure of the men in the medico-actuarial series to show a post-maximum shrinkage comparable with that observed in the criminals who were quite involuntary—not voluntary—applicants for measurement, who were not selected after measurement, and who were measured by experts for purposes of later identification instead of by general medical practitioners.

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#### SOME LANDMARKS IN THE HISTORY OF VITAL STATISTICS\*

In the earlier volumes of the Journal of the Royal Statistical Society—those mines of curious information—a favorite form of contribution was the “tabular résumé,” which presented a series of more or less statistical facts on a chronological base. With so distinguished a precedent it has seemed to me that the Quarterly Publications might care to present to its readers a small contribution in the same form, which I have recently drawn up for the use of my students in vital statistics.

This “tabular résumé” attempts to set forth in chronological array what seem to me to be some of the most important landmarks in the history of biostatistics. To disarm in some measure criticisms, which from the standpoint of the professional historian would otherwise be undoubtedly merited, I hasten to say, first, that there has been no slightest thought of encompassing within this short table a complete history of the subject. Historical completeness and the tabular form of presentation do not go well together. The object of the present table is much simpler. It is to get before the student the briefest conspectus of the time relations of the development of the subject on the one hand, and of the personalities concerned in a large path-breaking way in this development, on the other hand. The precise manner in which such an object will be carried out will obviously be different for each person who attempts it. One person's estimate as to the relative historical significance of a particular event or personality will differ from another's. In presenting the matter to my class I endeavor to justify in more detail than is possible in the table itself the particular items which appear. In any event, it seems clear that any historical review of vital statistics would be bound to contain at least a good many of the items of the present table. More than this in the way of agreement among scholars on a historical matter it is doubtless idle to hope for.

In the second place it should be said that if the sources chosen for statement of reference as to the fact are obviously in many cases second-hand, and perhaps somewhat casual, this is so of deliberate purpose. I am hopeful that by so choosing them I may perchance entice an unwary student or so to do a little reading about the men who have helped to develop modern statistics. I am quite sure that this will not happen if I refer him straight off to a ponderous and deadly “Geschichte der Statistik.” Nor is there much chance that the embryo health-officer would make anything but very heavy weather if he essayed a voyage into the “*Theorie analytique*.” But if he will read the article in the *Encyclopedia Britannica* on Laplace he will tend to have a measure of wholesome respect for a great man and will know a little at least of what that man meant in the history of science.

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## TABULAR REVIEW OF SOME OF THE IMPORTANT EVENTS IN THE HISTORY OF VITAL STATISTICS

Year	Event	Personality Concerned	Authority for Record
1532	First definitely known compilation of weekly bills of mortality in London	—	Hull, C. H., <i>Econ. Writ.</i> of Sir W. Petty, p. lxxxi
1539	Beginning of official registration of baptisms, marriages and deaths in France	—	Faure, F. <i>Hist. Stat.</i> p. 242
1608	Beginning of oldest parish register in Sweden	—	Arosonius, E. <i>Hist. Stat.</i> p. 537
1662	Publication of first edition of "Natural and Political Observations. Mentioned in a following Index, and made upon the Bills of Mortality"	Capt. John Graunt, Citizen of London (1620-1674)	Hull, C. H. <i>Econ. Writ.</i> of Sir Wm. Petty, p. 315
1666	First Census of Canada (The earliest modern census of population)	—	Godfrey, E. H. <i>Hist. Stat.</i> p. 179
1669	Application of mathematical theory of probability to expectation of human life	Christiaan Huygens (1629-1695)	Stuart, C. A. V. <i>Hist. Stat.</i> p. 430
1693	Publication of "Estimate of the Degrees of Mortality of Mankind," in the <i>Philosophical Transactions of the Royal Society</i>	Halley, the astronomer (1656-1742)	Hull, <i>Loc. cit.</i> p. lxxvii
1713	Publication of "Physico-theology; or a demonstration of the Being and Attributes of God from his Works of Creation"	Rev. William Derham (1657-1735)	Hull, <i>Loc. cit.</i> pp. lxxvii and lxxviii
1718	Publication of the "Doctrine of Chances"	A. DeMoivre (1667-1754)	Art. DeMoivre, <i>Encyc. Brit.</i> Kjaer, A. N. <i>Hist. Stat.</i> p. 447
1735	Registration of vital statistics begun in Norway	—	Hull, <i>Loc. cit.</i> p. lxxviii
1741	Publication of "Die göttliche Ordnung in den Veränderungen des menschlichen Geschlechts aus der Geburt, dem Tode und der Fortpflanzung derselben erwiesen, etc."	Johann Peter Süssmilch (1707-1767)	—
1746	Publication of the first French tables of mortality under the title "Essai, sur les probabilités de la durée de la vie humaine"	Deparcieux	Faure, F. <i>Loc. cit.</i> p. 265
1748	Beginning of Swedish official vital statistics	—	Arosonius, E. <i>Hist. Stat.</i> p. 540
1749	First complete Census of Sweden	—	Rossiter, W. S. <i>Cent. Pop. Growth</i> , p. 2
1753	First Census of population in Austria ordered	—	Meyer, R., <i>Hist. Stat.</i> p. 85
1769	First population Census of Denmark and Norway	—	Jensen, A. <i>Hist. Stat.</i> p. 201
1790	First federal Census of the United States	—	Stuart, C. A. V. <i>Hist. Stat.</i> p. 43
1795	First Census of the Netherlands	—	Jensen, A. <i>Loc. cit.</i> p. 201
1797	Establishment of Danish-Norwegian Tabulating Office	—	Rossiter, W. S. <i>Loc. cit.</i> p. 201
1798	First complete Census of Spain	—	Rossiter, W. S. <i>Cent. Pop. Growth</i> , p. 2
1801	First complete Census of Great Britain	—	Rossiter, W. S. <i>Loc. cit.</i> p. 201
1801	First complete Census of France	—	Rossiter, W. S. <i>Loc. cit.</i> p. 201
1805	Formation of first statistical state office within boundaries of German Empire	—	Würzburger, E. <i>Hist. Stat.</i> p. 3
1810	First complete Census of Prussia	—	Rossiter, W. S. <i>Loc. cit.</i> p. 201
1812	Publication of "Théorie analytique des probabilités"	Pierre Simon Laplace (1749-1827)	Encyc. Brit. Art. Laplace
1812	Inauguration of civil registration of births, marriages and deaths in the Netherlands	—	Stuart, C. A. V. <i>Hist. Stat.</i> p. 432
1812	Publication of "Theoria combinationis observationum erroribus minimis obnoxia" (Least squares)	Karl Friedrich Gauss (1777-1855)	Encyc. Brit. Art. Gauss
1815	First complete Census of Norway	—	Rossiter, W. S. <i>Loc. cit.</i> p. 201
1815	First complete Census of Saxony	—	Rossiter, W. S. <i>Loc. cit.</i> p. 201
1816	First complete Census of Baden	—	Rossiter, W. S. <i>Loc. cit.</i> p. 201
1818	First complete Census of Austria	—	Rossiter, W. S. <i>Loc. cit.</i> p. 201
1818	First complete Census of Bavaria	—	Rossiter, W. S. <i>Loc. cit.</i> p. 201
1825	Publication of "Mémoire sur les lois des naissances et de la mortalité à Bruxelles," Quetelet's first statistical paper	Lambert Adolph Jacques Quetelet (1796-1874)	Lottin, Quetelet, p. xx
1826	Establishment of statistical commission in Belgium	Ed. Smits	Julin, A. <i>Hist. Stat.</i> p. 126
1829	First official Census of Belgium	Ed. Smits	Julin, A. <i>Hist. Stat.</i> p. 128

TABULAR REVIEW OF SOME OF THE IMPORTANT EVENTS IN THE HISTORY OF VITAL STATISTICS.—*Concluded*

Year	Event	Personality Concerned	Authority for Record
1832	Publication of "Recherches sur la reproduction et sur la mortalité de l'homme aux différents âges et sur la population de la Belgique d'après la recensement de 1829 (premier recueil officiel des documents statistiques)"	Quetelet and Smits	Lottin, <i>Loc. cit.</i> p. xxi.
1834	Royal Statistical Society (London) founded	—	Title page of Journal
1835	Publication of "Sur l'homme et le développement de ses facultés, ou Essai de physique sociale"	Lambert Adolphe Jacques Quetelet (1796-1874)	Lottin, <i>Loc. cit.</i> p. xxi
1836	First complete Census of Greece	—	Rossiter, W. S. <i>Loc. cit.</i>
1837	Civil registration of vital statistics in England. Establishment of office of Registrar-General	—	Baines, A. <i>Hist. Stat.</i> p. 370
1837	Appointment of William Farr as compiler of abstracts in the Registrar-General's Office	William Farr (1807-1883)	Encyc. Brit. Art. Farr.
1838	Publication of "Essay on Probabilities" in Lardner's Encyclopedia	Augustus DeMorgan (1806-1871)	Encyc. Brit. Art. DeMorgan
1839	Organization of American Statistical Association	—	Hist. of Stat. p. 3
1846	Publication of "Analyse mathématique sur les probabilités des erreurs de situation d'un point." Acad. des Sci. Mem. par div. sav. IIe. Ser. t. ix (Correlation)	A. Bravais	Yule Introd. p. 188
1848	Foundation of the Institute of Actuaries of Great Britain and Ireland	—	Encyc. Brit. Art. "Actuary"
1860	First complete Census of Switzerland	—	Rossiter, W. S. <i>Loc. cit.</i>
1861	First complete Census of Italy	—	Rossiter, W. S. <i>Loc. cit.</i>
1863	Austria established Central Statistical Commission	Count Mercandini	Meyer, R. <i>Loc. cit.</i> p. 89
1865	Publication of "History of Mathematical Theory of Probability from the Time of Pascal to that of Lagrange"	Isaac Todhunter (1820-1884)	Encyc. Brit. Art. Todhunter
1867	First creation of independent official statistical organization in Hungary	—	Buday, L. von. <i>Hist. Stat.</i> p. 395
1869	Publication of "Hereditary Genius"	Sir Francis Galton (1822-1907)	Art. Galton Encyc. Brit.
1869	Foundation of Société de statistique de Paris	—	Title page of Journal
1872	Opening of German Imperial Statistical Office	—	Würzburger, E. <i>Hist. Stat.</i> p. 337
1881	First general Census of India	—	Baines, A. <i>Hist. Stat.</i> p. 421
1887	Royal Statistical Society incorporated by Royal Charter	—	Title page of Journal
1890	First Census in which mechanical methods of tabulation were used	John S. Billings and Herman Hollerith	Rept. Supt. Census 1889, p. 8
1894	Publication of first of "Contributions to the Mathematical Theory of Evolution" in Phil. Trans. Roy. Soc.	Karl Pearson	Title page
1897	Publication of paper "On the Theory of Correlation" in the Jour. Roy. Stat. Soc.	G. Udny Yule	Jour. Roy. Stat. Soc. Vol. LX, p. 812
1897	First Census of Russia	—	Kaufman, A. <i>Hist. Stat.</i> p. 481
1900	First year of separately published official mortality statistics for Registration Area of United States	—	Title page of "Mortality Statistics"
1901	Publication of first number of Biometrika	Francis Galton Karl Pearson W. F. R. Weldon C. B. Davenport	Title page
1902	Creation of permanent Census Bureau in the United States	—	Cummings, J. <i>Hist. Stat.</i> p. 682
1915	First year of separately published official birth statistics for Registration Area of United States	—	Title page of "Birth Statistics"

## EXPANDED TITLES OF REFERENCES CITED IN TABLE

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 Yule, G. U. Introduction to the Theory of Statistics. Fifth Edition. London (Griffin & Company). 1919.

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